CARE DELIVERY ReCAP

Advanced Practice Providers and Survivorship Care: They Can Deliver

Bridgette Thom, MS[1]; Annelies H. Boekhout, PhD, RN[2]; Stacie Corcoran, RN[1]; Roberto Adsuar, MS[1]; Kevin C. Oeffinger, MD[3]; and Mary S. McCabe, RN[1]

QUESTION ASKED: Can advanced practice providers (APPs; nurse practitioners [NPs] and physician assistants) deliver cancer survivorship care that is in accordance with Institute of Medicine guidelines for quality care?

SUMMARY ANSWER: Our findings suggest that APPs can provide survivorship care that meets Institute of Medicine guidelines and ensures survivors receive timely screenings for recurrence and new cancers, along with appropriate and relevant counseling about health promotion and symptom management.

WHAT WE DID: We reviewed the medical records of 622 breast, prostate, or colorectal cancer survivors who were seen in NP-led clinics to determine the frequency of surveillance for recurrence, screening for second cancers, symptom management (physical and psychological), health promotion education (alcohol, tobacco, cholesterol, and bone density screenings; diet/exercise discussion), care coordination with outside providers, and provision of a survivorship care plan.

WHAT WE FOUND: All patients across the three disease sites received appropriate screening for recurrence, and 83% to 100% were screened for new cancers. Health promotion activities ranged from 69% to 100%, and symptoms were discussed in 89% to 97% of visits.

BIAS, CONFOUNDING FACTORS: Our study was limited in that it was an evaluation of care at a single academic medical center. It is important to assess the ability to provide this comprehensive set of services delivered by APPs in other settings, especially in community practices and public hospitals. In addition, that NPs can bill in New York allowed for a business model that included income to be generated by the NPs for their services. In states and other jurisdictions where this is not possible, other business models would need to be developed to offset the APP services.

REAL-LIFE IMPLICATIONS: To date, evaluation of the care provided in survivorship care models has been lacking, in particular, survivorship care provided by APPs. Thus, our retrospective evaluation is unique in that it takes a broad, practical look at the delivery of recommended services to adult survivors of three common cancers within the APP-led model of survivorship care. The findings from this evaluation demonstrated that the NPs were able to deliver care in adherence with established guidance and to function as independent providers. Key components in program success included comprehensive training and orientation for APPs and consistent communication between APPs and primary care providers.

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original contribution

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abstract

INTRODUCTION As the number of cancer survivors grows, new models of survivorship care are being implemented, but there is limited evaluation to date. This retrospective review assesses the concordance of care provided to adult-onset cancer survivors by advanced practice providers (nurse practitioners and physician assistants) with Institute of Medicine guidelines for survivorship care.

METHODS Records from three survivorship clinics at a single institution were reviewed for frequency of recurrence surveillance, screening for second cancers, symptom management (physical, psychological), health promotion education (alcohol, tobacco, cholesterol, and bone density screenings; diet/exercise discussion), care coordination, and provision of care plan. Data were characterized using descriptive statistics.

RESULTS Over 2 years, 9,052 unique survivorship visits occurred; 210 breast, 208 prostate, and 204 colorectal visits were randomly selected for review. All patients with breast cancer underwent surveillance for recurrence; 99% were screened for new cancers. Discussion of health promotion activities ranged from 83% to 100%; 91% of patients were reviewed for physical symptoms, and 93% were reviewed for psychological symptoms. All patients with prostate cancer underwent recurrence surveillance; 97% were screened for new primaries. Health promotion activities ranged from 70% to 97%, and symptoms were discussed in 89% of visits. All patients with colorectal cancer underwent a surveillance colonoscopy for recurrence; 97% had a carcinoembryonic antigen test. Among women, 97% had mammograms, and 96% had a Papanicolaou test; 83% of men had a prostate-specific antigen test. Health promotion activities ranged from 69% to 100%, and symptoms were discussed in 93% to 97% of visits.

CONCLUSIONS Findings suggest that advanced practice providers can provide survivorship care in accordance with Institute of Medicine standards, which provide a normative standard. This assessment is an important step in evaluating survivorship outcomes.

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INTRODUCTION

It has been more than a decade since the publication of the seminal Institute of Medicine (IOM) report, *From Cancer Patient to Cancer Survivor: Lost in Transition*.[1] During this time, the number of cancer survivors has increased, both in the United States and internationally, with an estimated 33 million survivors globally.[2] Currently in the United States, there are more than 15.5 million cancer survivors, representing nearly 5% of the population.[3] By 2026, the number of survivors will reach more than 20.3 million in the United States, and by 2040, it is estimated that 73% of survivors will be older than 65 years of age.[4] In the United States and many European countries, 5-year survival rates have increased to 50% or greater for individuals diagnosed with adult-onset cancers and 83% for childhood cancers; in the United States, 5-year survival for all cancers combined was 67% in 2013.[5]

Concomitant with these positive results in survival rates, researchers have identified substantial risks for morbidity, reduced quality of life, and premature mortality for some survivors as a result of their cancer and/or cancer treatment.[1] These late and long-term effects cross the physical (eg, cardiopulmonary, infertility, second malignancies),[6-8] psychological (eg, fear of recurrence, anxiety, depression),[9,10] and practical (eg, employment difficulties, insurance and financial issues)[11,12] domains. As such, increasing attention is being paid to the post-treatment period of care and the subsequent challenges of developing new models of survivorship care to address these needs and implementing methods of evaluation to track health outcomes.[1]

In recent years, national professional organizations have published position papers (American Society of Clinical Oncology [ASCO], IOM), clinical care guidelines (National Comprehensive Cancer Network [NCCN], ASCO, and American Cancer Society), and professional standards (American College of Surgeons) focused on cancer survivorship. Also, there is a growing body of literature establishing the key components of survivorship care, including the need for ongoing medical services, psychosocial support, and monitoring for late effects and cancer recurrence. Although some research has found an underuse of surveillance tests in cancer survivors,[13] other studies have suggested there is variation between recommended age-appropriate screening for second primary cancers and observed cancer screening in cancer survivors.[14-17] In addition to research addressing service utilization, a number of survivorship care delivery models have been proposed in the literature, including care led by varying providers: oncologists and other physician specialists, community-based primary care providers (PCPs), advanced practice providers (APPs; nurse practitioners [NPs] and physician assistants), or care shared within a multidisciplinary team.[18-23] Although these reports outline the structure of the associated models, evaluation efforts, be they focused on the feasibility of implementation or the effectiveness of a particular model, have been limited.[24] To address this growing need for evaluation, this article describes one aspect of effectiveness evaluation: the concordance of care provided in APP-led survivorship clinics (in this case, NPs) with IOM guidelines for comprehensive survivorship care, among a sample of adult survivors at a single institution, Memorial Sloan Kettering Cancer Center (MSK; Table 1).

MSK EXPERIENCE

In 2003, MSK established its Survivorship Initiative, an institution-wide approach to addressing post-treatment clinical care, research, and education. Recognizing that many factors determine what care model works best within an academic medical center, hospital, or private practice, a multidisciplinary planning committee considered MSK's existing clinical care model, institutional culture, survivor population, and available resources.[23,25] Needs assessments and focus groups with patients, providers, and administrators determined survivors' unmet needs, gaps in care, and anticipated resources; this feedback shaped the approach to developing the survivorship care model. Other considerations in program development were projected increases in the number of patients with cancer, historically limited communication with PCPs, and an increased focus on efficient care delivery models.

All clinical components of care, including patient eligibility for referral to survivorship, timing for referral, and follow-up care guidelines (on the basis of evolving guidelines developed by the NCCN, ASCO, and the American Cancer Society),[26-28] were established in partnership with disease- or modality-based physician specialists. Organizational details, such as clinic metrics, approval of incremental positions, staff support, and physical space for examination rooms, were established through collaboration with hospital administration. Survivorship program staff provided institution-wide education at staff meetings, in-services, and grand rounds to raise awareness and gain support for the initiative.

In 2006, three pilot clinics (lung, prostate, and lymphoma), led by three survivorship NPs, were opened, focusing on disease groups with physician champions in leadership positions. Since 2006, the program has expanded to include 17 disease site clinics and 23 survivorship NPs. Patients were eligible for transition from the oncologist to a survivorship NP if they were at low risk for recurrence and significant late or long-term effects, as determined by NCCN guidelines, published data, and clinical consensus. The NP provided focused, comprehensive care to patients and communicated with local PCPs through the provision of a follow-up note, treatment summary, and survivorship care plan (SCP). To allow the NPs to build their practices while working side by side their physician and nursing colleagues, the NPs were embedded in the treatment team, rather than having a standalone survivorship clinic. This approach provided continuity for patients as they transitioned from active treatment to long-term follow-up care. Neither group—survivors nor clinicians—had to relinquish access to the other, which is often cited as a barrier to the success of survivorship care models.[29]

To determine oncology provider acceptance of the survivorship APP model, physician referrals were tracked and ranged from 80% to 100% of physicians referring at least some of their eligible patients to the NP clinics. To determine patient satisfaction with the NP clinics, a surrogate end point was used: the number of individuals who had one NP visit, but returned to care by the oncologist in the absence of a recurrence; 95% to 98% of patients who were referred by their oncologist remained in the NP clinics.

TABLE 1. Essential Components of Survivorship Care

Survivorship Care Activity
Prevention and detection of new cancers and recurrent cancer
Surveillance for recurrence or new primaries
Interventions for long-term and late effects (physical and psychological) from cancer and its therapies, including health promotion education
Coordination between specialists and primary care providers to ensure that all of the survivor's needs are met

NOTE. Adapted from Hewitt et al.[1]

METHODS

Patients

This study was approved as retrospective research by the MSK Institutional Review Board/Privacy Board. The cohort for evaluation consisted of cancer survivors who were being followed in one of three APP-led survivorship clinics at MSK—breast, prostate, or colorectal—the three disease types with the largest number of survivors nationally (50% of all cancer survivors in the United States). Eligible survivors were those with early-stage breast cancer, colon cancer, rectal cancer, or prostate cancer; under active routine follow-up; without recurrence or new primary cancer; and with at least two visits to the survivorship clinic from January 2011 to December 2013. Male patients with breast cancer were excluded, as were patients with prostate cancer who received radiation and patients with colorectal cancer who received chemotherapy, to ensure that patients with metastatic disease were not inadvertently included in the analysis. A random sample of 622 survivors was drawn from the eligible survivor population (N = 5,815): records were reviewed for 210 patients (of 4,298) with breast cancer, 208 patients (of 963) with prostate cancer, and 204 patients (of 498) with colorectal cancer.

Data Collection Procedures

All sampled patients were identified through a hospital-based registry. Medical records of the selected patients were reviewed to determine frequency of surveillance for recurrence, screening for second cancers, provision of symptom management (physical and psychological), health promotion education, care coordination, and provision of an SCP.

Study Outcomes

Outcomes were selected to measure the elements of comprehensive survivorship care and were assessed by reviewing each medical record for documentation of the following:

1. Adherence to the clinical guideline on follow-up care: the frequency and types of surveillance for recurrence screenings were recorded; frequency of and reason for additional testing were also assessed.
2. Screening for new primary cancers: discussion of age- and sex-appropriate screening for second primary cancers.
3. Symptom management: discussion of physical (eg, lymphedema, fatigue, sexual dysfunction, incontinence), and/or psychological symptoms (eg, depression, anxiety).
4. Health promotion education: counseling regarding physical activity, diet, alcohol abstinence, tobacco cessation, cholesterol screening, and bone density testing.
5. Care coordination: involvement of the PCP in survivorship care.
6. Delivery of SCP: receipt of a care plan at any time during follow-up.

Recommended surveillance tests (ie, magnetic resonance imaging of the breast, breast ultrasound, mammogram, prostate-specific antigen [PSA] blood test, carcinoembryonic antigen blood test, colonoscopy) were based on clinical practice guidelines. Screening tests for second cancers (Papanicolaou test, mammogram, PSA test, and colonoscopy) were based on guidelines from the US Preventive Services Task Force.[30] The provision of symptom management (physical and psychological), health promotion education (alcohol, tobacco, cholesterol, bone density screenings, and discussions on diet and exercise), and care coordination and provision of SCP were evaluated based on the recommendations of the IOM. Of note, the correspondence with the PCP via SCP made clear which testing responsibilities were undertaken by the NP, and test results for recurrence and screenings were provided to the PCP along with a progress note. As such, we did not assess testing ordered by PCPs.

Statistical Methods

Data were characterized using descriptive statistics. Frequency reports were generated for each of the outcomes noted previously.

RESULTS

Table 2 lists the patient demographics. Patients with breast cancer in the sample were 53 years old, on average, at diagnosis and 63 years old at the time of their first survivorship visit. The most frequently occurring comorbid conditions among patients with breast cancer were hypertension (45%) and high cholesterol (38%). Patients with prostate cancer were, on average, 59 years old at their diagnosis and 64 years old at their first survivorship visit; 56% of patients with prostate cancer had high cholesterol, and 53% were hypertensive. Among patients with colorectal cancer, the mean age at diagnosis was 62 years, and the mean age at first survivorship visit was 68 years. The most frequently occurring comorbid conditions among patients with colorectal cancer were high cholesterol (61%) and hypertension (49%).

Among breast cancer survivors, all eligible patients underwent surveillance testing (mammogram; 21 had a bilateral mastectomy as part of treatment and were ineligible for mammography), and 99% received screenings for new primary cancers (colonoscopy, Papanicolaou test). Frequency of discussion of designated health promotion activities ranged from 83% to 100%. Physical symptoms were discussed in 91% of visits, and psychological symptoms were discussed in 93% of visits. Ninety-one percent of patients with breast cancer had a PCP involved in their care, and 70% received an SCP (Table 3).

Among prostate cancer survivors, all patients underwent surveillance testing (PSA), and 97% had a colonoscopy for

TABLE 2. Patient Demographics

Characteristic	Breast (n = 210)	Prostate (n = 208)	Colorectal (n = 204)
Mean age at diagnosis, years (SD)	52.9 (10.6)	59.1 (6.8)	61.6 (11.6)
Mean age at first survivorship visit, years (SD)	63.2 (10.9)	63.5 (7.4)	68.2 (11.6)
Marital status			
Single	18	10	11
Married	64	54	67
Divorced/separated	11	4	9
Widowed	8	1	13
Insurance			
Private	55	56	40
Medicare	44	43	60
Other/not reported	1	1	0
Stage at diagnosis			
0	14	—	1
1	34	5	15
2	14	69	3
3	2	7	6
4	0	0	1
Not reported	36	19	74
Smoking history			
Current smoker	8	8	8
Previous smoker	27	38	37
Never smoked	46	48	49
Not reported	19	6	6
Comorbidities			
Alcohol abuse	1	1	3
Anxiety	22	21	15
Diabetes	13	13	19
Heart disease	8	13	22
High cholesterol	38	56	49
Hypertension	45	53	61
Mood disorder	6	1	1

NOTE. Values are percent unless otherwise specified.
Abbreviation: SD, standard deviation.

new cancer screening. Health promotion activities were discussed in 70% to 97% of visits, and physical and psychological symptom management was discussed in 89% of visits. Evidence of PCP involvement with this group of patients with prostate cancer could not be determined because of variation in medical record systems at the time of this evaluation, and 36% of prostate survivors received an SCP.

In colorectal cancer survivors, all eligible patients underwent a colonoscopy for surveillance testing (seven patients had total or subtotal colectomy), and 97% had a carcinoembryonic antigen test. Among female colorectal cancer survivors, 97% and 96% had a mammogram and Papanicolaou test, respectively, whereas 83% of male patients had a PSA test. Health promotion education activities were discussed in 69% to 100% of visits, and symptom management was discussed in 93% to 97% of visits. Ninety-four percent of patients with colorectal cancer had a PCP involved in their care, and 92% of patients with colorectal cancer received an SCP.

DISCUSSION

To date, evaluation of the care provided in survivorship care models is lacking, in particular, survivorship care provided by APPs. Thus, our retrospective evaluation is unique in that it takes a broad, practical look at the delivery of recommended services to adult survivors of three common cancers within the APP-led model of survivorship care. The findings from this evaluation demonstrated that the NPs were able to deliver care in adherence with established guidance and to function as independent providers.

The Role of the APP

Increasingly, as health care systems evolve to ensure quality and efficiency in care delivery, there is acknowledgment of the role for APPs in oncology care, with specific emphasis on the post-treatment period.[24,31,32] Our choice of NPs as one set of APPs to care for adult cancer survivors was built on a number of reports calling for nurses to practice at the top of their licenses and follows an Agency for Healthcare Research and Quality report that identified NPs as having “the right training and skills to address survivorship issues with patients.”[33(p23)]

In addition, from a practical perspective, the choice of NPs as sole providers came from the institutional realization that it was important to free up the oncologists to see new patients and was part of the institutional plan to increase APPs in clinical care generally, especially in the outpatient setting. The NPs in our survivorship program all had extensive oncology experience before being hired and gained their survivorship experience through a formal orientation, with sign off by the collaborating physician and an NP nurse leader. The APP training and orientation focused on disease(s), treatment exposures, and associated long-term and late effects, as well as health promotion and cancer screening. Mentorship was essential in reviewing didactic tools and coordinating clinical experiences. Competencies were used to evaluate practice throughout training and at the completion of orientation. After orientation, ongoing mechanisms are used to regularly monitor practice, including clinical case reviews, peer-to-peer evaluation, and documentation audits.

New York State allows NPs to bill health plans; therefore, our survivorship NPs could receive payment from both private payers and Medicare for their independent visits.

TABLE 3. Percentage of Sample Charts/NP Notes Containing Relevant Information

Relevant Information	Breast (n = 210)	Prostate (n = 208)	Colorectal (n = 204)
Surveillance for recurrence			
Imaging	100*	—	—
Testing	—	100	100†, 97‡
Screening for new primary			
Colonoscopy	99	97	—
Mammogram	—	—	97§
Papanicolaou test	99	—	96§
PSA	—	—	83‖
Symptom management			
Physical	91	89	93
Psychological	93	89	97
Health promotion education			
Alcohol	99	83	99
Bone density	99	—	—
Cholesterol	83	70	69
Diet	76	76	88
Physical activity	100	97	100
Tobacco	99	86	100
Care coordination	91	—	94
Survivorship care plan	70¶	36	92

Abbreviations: NP, nurse practitioner; PSA, prostate-specific antigen.

*21 not applicable.

†Colonoscopy; seven not applicable.

‡Carcinoembryonic antigen.

§102 not applicable (male).

‖102 not applicable (female).

¶163 not applicable.

This allowed for a business plan to support the APP model of survivorship care. We acknowledge that not all states allow for such billing and may prevent independent visits as a financially viable option or limit the role of APPs.

Communication With the PCP

Expanding the focus of the survivorship visit beyond an assessment for recurrence required attention to the incorporation of national standards/guidelines for cancer screening, visit frequency, symptom management, and health promotion in an efficient and consistent manner. It is important to note that it was possible to focus on psychosocial as well as medical issues during the visit, because survivors identify psychosocial concerns as being critical factors in their post-treatment quality of life.[34,35] At the same time, these clinics required that the NPs focus specifically on the cancer-related issues, acknowledging that they are sharing care of their survivors with the community PCP. That is, the survivorship APP and the generalist PCP were both involved in the care of the patient at the same time, each with their own set of responsibilities. That the majority of survivors in this sample had a PCP involved in their care is significant, because we know many patients give up their PCP during cancer treatment.[36,37] This result is likely due to two reasons: the majority of the sample in this review has insurance—private or public—and the NPs actively sought out PCPs for their patients who did not have one, a responsibility required of the NPs and discussed during their survivorship training and evaluation.

Communication with the PCP in our APP-led clinics included an SCP along with a copy of the most recent progress note; we chose to evaluate the provision of the SCP in this review because it is a standard required by the American College of Surgeons. Staffing difficulties resulted in the low/variable rate of SCP use in the time period studied; in both our prostate and breast cancer clinics, staffing changes and temporary shortages while new NPs were trained necessitated the decision to prioritize the clinic visit over the SCP. Because a progress note was readily available to be sent to the PCP and a process was in place for it to be faxed, the priorities were adapted to focus on the clinical care and suspend the provision of the SCP during the period of change. Since the period under study, our electronic medical record has improved, and SCP templates have been proposed that require a limited data set such that they can be completed in a brief amount of time.[38-40]

To determine PCP satisfaction with the SCP, we conducted a brief survey of PCPs whose patients were being followed by the survivorship NP. Twenty percent of PCPs responded to the survey, and, of these, 88% stated that they would discuss the SCP with the patient, 70% stated that they received new information, and 33% stated that they would change their plan of care on the basis of the information provided by the NP in the SCP.

Our study is limited because it is the evaluation of the IOM recommendations within the APP model of care at a single academic medical center. Thus, it is important to assess the ability to provide this comprehensive set of services delivered by APPs in other settings, especially in community practices and public hospitals. Finally, the fact that NPs can bill in New York allowed for a business model that included income to be generated by the NPs for their services. In states where this is not possible, other business models would need to be developed to offset the APP services.

In conclusion, this study provides a straightforward evaluation of an APP model of survivorship care demonstrating success in providing IOM-recommended services. Moving forward, it will be important for researchers to continue to evaluate not only the quality of survivorship services, but also the efficiency of the various models of care delivery. In addition, it is essential to move beyond the process measures used in this study—compliance with screening and delivery of medical and psychosocial services—to evaluate health outcomes and determine whether these services accomplish their intended goals. As we move forward with a rigorous evaluation effort in survivorship care, a key component of this research agenda will be the inclusion of patient-reported outcomes to ensure that we have the needed perspective on the outcomes of concern to various survivor populations. Only then will we be able to build a delivery system that ensures the highest quality of care for this growing population.

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST AND DATA AVAILABILITY STATEMENT

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AUTHORS' DISCLOSURES OF POTENTIAL CONFLICTS OF INTEREST

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